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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/630,421

07/30/2003

Oskar Rapp

331.1047

7837

27572

7590

06/08/2006

HARNESS, DICKEY & PIERCE, P.L.C.

P.O. BOX 828

BLOOMFIELD HILLS, MI 48303

EXAMINER

PATEL, VISHAL A

ART UNIT

PAPER NUMBER

3673

DATE MAILED: 06/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/630,421

Applicant(s)

RAPP ET AL.

Examiner

Vishal Patel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10, 12-14 and 16-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12-14 and 16-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>4/25/06</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

The previous Final Office Action was mailed to Customer Number 23200. The Final Office Action should have been mailed to Customer Number 27572. Below is the Final Office Action and a new time for reply is set.

#### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 5-6, 8, 12, 16, 21 and 23 rejected under 35 U.S.C. 102(b) as being anticipated by Munekata (US. 5,649,709).

Munekata discloses a lip seal that seals a gap between a housing (12) and an outer surface of a shaft (18), the lip seal having a supporting body (28), the supporting body having an annular part oriented radially to the shaft and a cylindrical part running axially to the shaft, the annular part having two opposing sides, a static sealing element attached to the cylindrical part and being made of a first material (elastomeric material 26, that is thin), an elastomeric dynamic sealing element (34) attached to the annular part, the dynamic sealing element forming a lip that is deformed to curve in a direction of a space to be sealed off or in a direction of an exterior environment upon directly contacting the outer surface of the shaft such that the lip lays over the outer surface of the shaft (lips 56 or 60 or 34 that is curved or deformed radially inwardly of the shaft when the shaft contacts the lip), the dynamic sealing element being fastened to the annular part and enclosing the annular part on the two opposing sides at a fastening point (the dynamic

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sealing element encloses the two opposing sides) and the static sealing element being positioned on the cylindrical part at a radial distance from the dynamic sealing element (a gap exist between the dynamic sealing element and the static sealing element). The dynamic sealing element having higher thermal stability than the first material of the static sealing element (this is the case since the dynamic sealing element is thicker than the static sealing element). The dynamic sealing element contacts the shaft and has a lip edge with a barrier feature (lip edge that contacts the shaft). The static sealing element has an outside surface.

The supporting body is made of metal. The static and dynamic sealing elements are connected to the supporting body (both the static and dynamic sealing elements are connected to the supported body) by vulcanization using a coupling agent (method limitation are not given patentable weight in an apparatus claim). The dynamic sealing element is deformed to form the lip during sliding of the seal onto the shaft (the curved lip that is formed by 56 or 60 or 34). The lip (34) has a lip surface. The static sealing element has at least one end chamfer and a bottom chamfer on an outside surface (chamfers on the static sealing element 26). The static sealing element completely envelopes the two opposing sides of the cylindrical part running axially to the shaft (see figures).

The method of claims 16 and 21 are inherently taught by Munekata.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Munekata.

Munekata discloses the claimed invention except that the radial distance between the static sealing element and the dynamic sealing element is at least 0.5mm. Discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Without the showing of some unexpected result. Since applicant has not shown some unexpected result the inclusion of this limitation is considered to be a matter of choice in design. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the radial distance to be at least 0.5mm as a matter of design choice.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Munekata in view of Bush (US. 3,785,660).

Munekata discloses the invention substantially as claimed above but fails to disclose that the lip surface having openings that provide return delivery of a medium to be sealed off. Bush discloses a lip having a lip surface (surface that contacts the shaft 26), the lip surface having openings (figure 5) to provide return delivery of a medium to be sealed off and the openings are helical. It would have been obvious to one having ordinary skill in the art at the time the invention was made to configure the lip surface of Munekata to have openings as taught by Bush, to provide hydrodynamic pumping (function of grooves or see column 1, lines 20-30 of Bush).

6. Claims 7 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Munekata in view of Peisker (US. 4,501,431).

Munekata discloses the invention substantially as claimed above but fails to disclose that the lip surface having concentric or screw-shaped openings and the openings are single-threaded or multiple threaded. Peisker discloses a lip surface having concentric or screw-shaped openings and the openings are single-threaded or multiple threaded (48). It would have been obvious to one having ordinary skill in the art at the time the invention was made to configure the lip surface of Munekata to have concentric or screw-shaped openings as taught by Peisker, to provide hydrodynamic pumping (see column 5, line 14 of Peisker).

7. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Munekata in view of Black et al (US. 5,346,662).

Munekata discloses the invention substantially as claimed above but fails to disclose that the outside sealing surface being corrugated. Black discloses an outside sealing surface of a static sealing element having corrugated surface (outside surface having 71). It would have been obvious to one having ordinary skill in the art at the time the invention was made to configure the outside surface of Munekata to have corrugated surface as taught by Black, to provide a tight removable connection between the lip seal and a housing (column 7, lines 30-32 of Black).

8. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Munekata in view of Besson et al (US. 6,401,843).

Munekata discloses the invention substantially as claimed above but fails to disclose that a sensor attached to housing and a sensor wheel or a multipole wheel on the shaft interacting with the sensor. Besson teaches to have a sensor (100 attached to the lip to housing) attached to the housing and a sensor wheel (101) attached to the shaft. It would have been obvious to one having ordinary skill in the art at the time the invention was made to configure the lip seal of

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Munekata to have a sensor and a sensor wheel as taught by Besson to provide detection of moving parts and possibly allow its rotational speed to be measured and/or controlled (column 4, lines 41-44 of Besson).

9. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Munekata in view of Guth et al (US. 6,336,638).

Munekata discloses the invention substantially as claimed above but fails to disclose that the dynamic sealing element includes fluororubber. Guth discloses that the dynamic sealing element is formed of fluororubber. It would have been obvious to one having ordinary skill in the art at the time the invention was made to configure the dynamic sealing element of Munekata to be formed of fluororubber as taught by Guth, to provide a dynamic sealing element that provides less friction and has superior wear resistance (characteristic of fluororubber).

10. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Munekata and Guth in view of Forschirm (US. 5,886,066).

Munekata and Guth disclose the invention substantially as claimed above but fail to disclose that the dynamic sealing element includes waxes or paraffin. Forschirm discloses a fluororubber having waxes or paraffin. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the configure the dynamic sealing element of Munekata and Guth to have paraffin or waxes as taught by Forschirm, to provide improved wear resistance and coefficients of frictions (see abstract of Forschirm).

11. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Munekata in view of Johnston et al (US. 6,428,013).

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Munekata discloses the invention substantially as claimed above but fails to disclose that the static sealing element includes a thermoplastic. Johnston discloses a lip seal having a static sealing element made of elastomer or thermoplastic (column 3, lines 59-65). It would have been obvious to one having ordinary skill in the art at the time the invention was made to configure the static sealing element of Munekata to be made of thermoplastic as taught by Johnston, since having a static sealing element made of elastomer or thermoplastic is considered to be art equivalent.

Regarding claim 20: Since the static sealing element is made of thermoplastic and the dynamic sealing element is made of elastomeric material they both would have different colors.

12. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Munekata and Bush as applied to claim 7 and in further view of Guth et al (US. 6,336,638).

Munekata and Bush disclose the invention substantially as claimed above but fail to disclose that the dynamic sealing element includes fluororubber. Guth discloses that the dynamic sealing element is formed of fluororubber. It would have been obvious to one having ordinary skill in the art at the time the invention was made to configure the dynamic sealing element of Munekata to be formed of fluororubber as taught by Guth, to provide a dynamic sealing element that provides less friction and has superior wear resistance and higher thermal stability than an elastomeric material (characteristic of fluororubber).

#### ***Response to Arguments***

13. Applicant's arguments with respect to claims 1-10, 12-14, 16-23 have been considered but are moot in view of the new ground(s) of rejection.



***Conclusion***

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vishal Patel whose telephone number is 571-272-7060. The examiner can normally be reached on 6:30am to 8:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patricia L. Engle can be reached on 571-272-6660. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

VP  
June 1, 2006

A handwritten signature in black ink, appearing to read "Vishal Patel", with a stylized flourish at the end.

Vishal Patel  
Primary Examiner  
Tech. Center 3600